REMARKS

Claims 72, 77, 80-85, 87, 89, 90-91, and 98-99 are pending in the application.

I. SUMMARY OF THE CLAIMED SUBJECT MATTER

The invention is directed broadly to methods for automatically staining a biological sample. The process of staining a biological sample involves applying different aqueous solutions, alone or in combination, to the biological sample located on a sample support. Useful biological sample supports include but are not limited to a glass microscope slides (claim 90) and slides (claim 99).

The claimed methods begin with a biological sample that is substantially covered by a first aqueous solution. (Specification page 7, line 23 to page 8, line 14). The biological sample and first and subsequently applied aqueous solutions are often heated during processing. Therefore, an evaporation-inhibiting liquid is applied to the biological sample to cover the sample and the first aqueous solution to prevent evaporation of the first and subsequently applied aqueous solutions and ultimately avoid dehydration of the biological sample. (Specification at page 27, lines 16-19). When a reagent is dispensed onto the evaporation–inhibiting liquid phase, the reagent passes through the evaporation–inhibiting liquid phase and into contact the first aqueous solution and biological sample. (Specification page 27, lines 9-11.) A problem with dispensing a reagent onto the evaporation–inhibiting liquid phase and thereafter into contact with the first aqueous solution is that the dispensed reagent and first aqueous solution need assistance in interacting with the biological sample. (Specification page 27, lines 16-18). This problem is solved in the present invention by directing at least one air jet at the surface of the evaporation-inhibiting liquid phase to cause the evaporation–inhibiting liquid phase to move. (See claim 72 – step b). The movement of the evaporation–inhibiting liquid phase is imparted to the underlying first aqueous solution and reagent mixture.

II. TRAVERSE OF THE MAZZA et al. ANTICIPATION REJECTION

The examiner rejected claims 72, 77, 80-85, 87, 89, 91 and 98 for allegedly being unpatentable under 35 U.S.C. § 102(e) for anticipation over Mazza et al. (USP No. 4,815,978).

In order for a reference to anticipate, all elements of a claimed invention must be found identically in a single prior art reference. *See General Electric Co. v. Nintendo Co., Ltd.*, 50 USPQ2d 1910, 1915 (Fed. Cir. 1999). The Mazza et al '978 patent reference does not meet this

standard. Claims 72, 77, 80-85, 87, 89, 91 and 98 are not anticipated at least because the '978 patent does not disclose applying an evaporation-inhibiting liquid phase to a sample undergoing testing.

The Examiner points to col. 8, lines 38-48 of the '978 patent for teaching the addition of an evaporation inhibiting layer to a test sample. The excerpt the examiner relies upon is reproduced below. The excerpt does not disclose or suggest the addition of an evaporation-inhibiting layer to a test sample.

> By directing the air jet J at an acute angle at the junction of the liquid surface in the cuvette with the partially closed top (opening) portion with the cuvette wall, preferably so that the air jet hits the meniscus at this junction, a vortex is created which produces a thorough mixing of the contents of the cuvette. This mixing is such that even a reagent which is particularly immissible in the diluent becomes totally suspended within the diluent and the reaction between the reagent and the sample is more complete and rapidly achieved.

('978 patent, col. 8, lines 38-48). This '978 patent excerpt merely indicates that one reagent in the cuvette may be immiscible in a diluent. Moreover, this excerpt teaches that the air mixing should be so vigorous that the immiscible reagent becomes "totally suspended within the diluent". As a result this excerpt and the remainder of the '978 patent fail to teach several elements of the claimed invention including that (1) the immiscible fluid covers the reagent; and (2) that the immiscible fluid remains in place to preserve the biological sample from dehydration from the air stream even during air mixing. The fluid of the '978 patent that becomes "totally suspended" in the reagent cannot accomplish either of these claimed features of the present invention.

The '978 patent does not anticipate any pending application claims. Each of the pending application requires an undisturbed evaporation inhibiting layer through which subsequent solutions are applied in order to contact an underlying biological sample. The '978 patent reference is silent about adding an evaporation inhibiting liquid to the cuvette. Therefore, the '978 patent cannot anticipate because it does not disclose each and every element claims 72, 77, 80-85, 87, 89, 91 and 98 as is required of an anticipatory reference.

III. TRAVERSE OF THE DiMAGGIO ANTICIPATION REJECTION

The examiner rejected claims 72, 77, 80-85, 87, 89, 90-91 and 98-99 for allegedly being unpatentable under 35 U.S.C. § 102(e) for anticipation over DiMaggio et al. USP 4,413,584.

DiMaggio et al., as with Mazza et al., does not anticipate any pending application claim at least because DiMaggio does not disclose a biological sample that is substantially covered by a first aqueous solution "and an evaporation inhibiting liquid phase covering the first aqueous solution" as is required by all of the pending application claims. Instead, DiMaggio et al. discloses a staining apparatus and process. DiMaggio et al. touts that the disclosed invention

> "Includes a new method of staining slides that requires the employment of only two solutions, namely, the stain and the buffer." (Column 6, lines 17-19).

From this teaching, it is clear that the DiMaggio apparatus and methods do not include an evaporation inhibiting liquid face covering an aqueous solution on the biological sample. For at least this reason, DiMaggio does not disclose every feature of the presently claimed invention and it cannot anticipate any pending application claims.

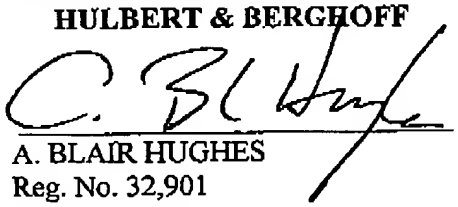
CONCLUSION

The applicants have traversed the examiner's anticipation rejections above. Favorable reconsideration and allowance of all pending application claims is, therefore courteously solicited.

Respectfully submitted,

McDONNELL BOEHNEN
HULBERT & BERGHOFF

Dated: May 27, 2005

By: 

A. BLAIR HUGHES
Reg. No. 32,901
312-913-2123